AERIAL RESCUE

Arboricultural Association
cares for trees

Arboricultural Association

Ampfield House • Romsey • Hants • SO51 9PA
Tel 01794 368717 • Fax 01794 368978

FORESTRY • ARBORICULTURE • SAFETY • TRAINING

The Forestry Authority
Forestry Commission

Forestry & Arboriculture Safety & Training Council
231 Corstorphine Road • Edinburgh • EH12 7AT
Tel 0131 314 6193/6247 • Fax 0131 316 4344

ISBN 1-901757-00-5

9 781901 757002

£1.50

AERIAL RESCUE

GUIDANCE NOTES

This publication was produced as a collaborative effort between FASTCo and the Arboricultural Association.

First published in April 1997
by the Forestry & Arboriculture Safety & Training Council
231 Corstorphine Road, Edinburgh, EH12 7AT

Designed and Typeset by Almond Design, Leith, Edinburgh EH6 6HD

Print by Nimmos Colour Printers, Edinburgh
ISBN 1-901757-00-5

1.0 INTRODUCTION

1.1 **Tree climbing operations are potentially fatal. It is important that climbers receive thorough training in climbing techniques and aerial tree rescue methods.**

1.2 **The tree climbing equipment referred to is for work positioning techniques – it is not designed for fall arrest.**

1.3 This booklet aims to give guidance on basic methods of aerial tree rescue without the need to use specialised equipment. The techniques require competence in the use of harness, prusik knot, rope and strop systems.

1.4 Tree surgery operations normally involve the use of chainsaws and other tools off the ground which may lead to further hazards for the rescuer. Operators should be familiar with FASTCo Safety Guide 401.

1.5 Climbers may fall casualty to a number of accidents such as:

a. Having their rope cut
b. Falling from branches (if rope system is not kept taut)
c. Becoming unconscious (various reasons)
d. Becoming stuck/frightened, e.g. inexperienced climbers
e. Cutting themselves
f. Pendulum impact or any other reason beyond their control
g. Impact of severed and/or deadwood arising from operations
h. Electrocution

1.6 When carrying out aerial tree rescue it is vital to ensure the members of the rescue team are not put at risk themselves. Therefore before undertaking recovery of the casualty the rescue team should make a risk

1.0 INTRODUCTION

assessment to select a procedure which avoids endangering themselves. The team should be qualified in First Aid and be able to promptly call for assistance from appropriate specialists.

1.7 Aerial rescue should be practised regularly, once a month is suggested, so that all members of the team are familiar with the techniques and are kept aware of the guidelines given by general risk assessment of aerial tree rescue operations together with specific advice in FASTCo Safety Guides:

401 Tree Climbing Operations

802 First Aid

804 Electricity at Work Forestry and Arboriculture

402 Aerial Tree Rescue

Obtainable from: FASTCo
231 Corstorphine Road
Edinburgh, EH12 7AT
Tel No. 0131 314 6326

2.0 COMMUNICATION

It is important that the location of the nearest telephone is known to all staff on site, and noted down. Mobile telephones are now widespread, with varying levels of reception. Check that your telephone functions on the worksite, that all staff can use it and know its number in case you have to be called back. Operators should ensure that they can quote their location accurately, ie either a grid reference or street names to be able to give the emergency services adequate details of site access points. When necessary a rendezvous point should be agreed together with arrangements to conduct emergency services to the site.

3.0 EQUIPMENT REQUIRED

a Rescue rope long enough to complete rescue, (FASTCo 401).

b Prusik system and Strop(s).

c Harness and a minimum of 3 Karabiners (FASTCo 401).

d First Aid Kit (FASTCo 802).

e Appropriate Personal Protective Equipment for climbers and groundstaff (FASTCo 401).

ADDITIONAL ITEMS

f Sharp knife with retractable blade.

g Climbing irons (for faster access and pole rescue).

h Topping Down strop or appropriate alternative.

i Chest strop (spare long strop or purpose made).

j Any additional climbing aids which may be available and which the rescue team has been trained to use e.g. ladders, mechanical ascent and descent equipment.

3.1 **The non specialist equipment, items (a) to (e), must always be available at the operational site.**

4.0 EMERGENCY PROCEDURE

All operatives should have attended an HSE recognised First Aid course, and be trained in basic techniques (FASTCo 802).

4.0 EMERGENCY PROCEDURE

4.1 A risk assessment must be carried out before starting work. The appropriate equipment and number of operators must be decided and emergency procedures agreed by all staff.

4.2 Everyone engaged in tree climbing operations must receive appropriate training in all the tasks they are asked to undertake.

4.3 In the event of an accident to a climber keep calm, stop all other work at once and make a thorough assessment of the situation.

4.4 Reassure the casualty at all times, notifying him/her that help is on the way and that they are in safe hands (this can only be realistic if the team has practised aerial rescue). Further guidance is given in FASTCo Safety Guides 401, 402 and 802.

4.5 The rescuer may have to administer primary first aid to the casualty who, if they are able, can assist the rescuer.

4.6 Send for help from the appropriate emergency services giving them your contact telephone number. They will require specific details of:

a. the exact location
b. site access or rendezvous point
c. casualty's injuries
d. special problems, e.g. power lines

4.7 Select the most appropriate rescue method and agree roles with the rescue team members. If possible advise the casualty of the rescue team's intentions.

4.0 EMERGENCY PROCEDURE

4.8 Having completed a rescue, ensure the incident is reported promptly to relevant authorities (RIDDOR) and management.

5.0 FIRST AID TO THE CASUALTY

5.1 Do not move the casualty until you have assessed their condition thoroughly.

5.2 If spinal injuries are suspected do not move the casualty until specialist help arrives.

5.3 Secure the casualty to the tree if required.

5.4 Remove any immediate hazards, e.g. chainsaws and/or tools.

5.5 Check the casualty's condition and apply primary first aid.

5.6 If necessary, attach chest harness/strop to support casualty's upper body.

5.7 Lower the casualty to the ground as quickly as possible giving constant reassurance.

5.8 Put casualty into the recovery position and keep warm and dry, using an exposure bag/space blanket or spare jackets, etc. Do not give him/her anything to eat/drink.

5.9 Wait for medical assistance or remove the casualty to hospital continuing to monito[illegible]cord the condition and reassure the casualty.

6.0 RESCUE METHODS

6.1 **RESCUE METHOD A:** 2 or 3 person team, where casualty's rope is undamaged and long enough to descend on.

6.2 **RESCUE METHOD B:** 2 or 3 person team, where casualty's rope is damaged, trapped or too short to descend on without re-tying into a lower anchor point.

6.3 **RESCUE METHOD C:** 3 person team as per Method B.

6.4 **RESCUE METHOD D:** From a pole, 2 or 3 person team.

RESCUE METHOD A.

2 or 3 MAN UNIT WHERE CASUALTY'S ROPE IS UNDAMAGED AND LONG ENOUGH TO DESCEND ON.

A1 The rescuer climbs to a suitable anchor point above the casualty.

A2 The rescuer descends to the casualty, assesses and makes safe any hazards which threaten the casualty or would impede the rescue, e.g. chainsaw, other equipment/tools, tree debris.

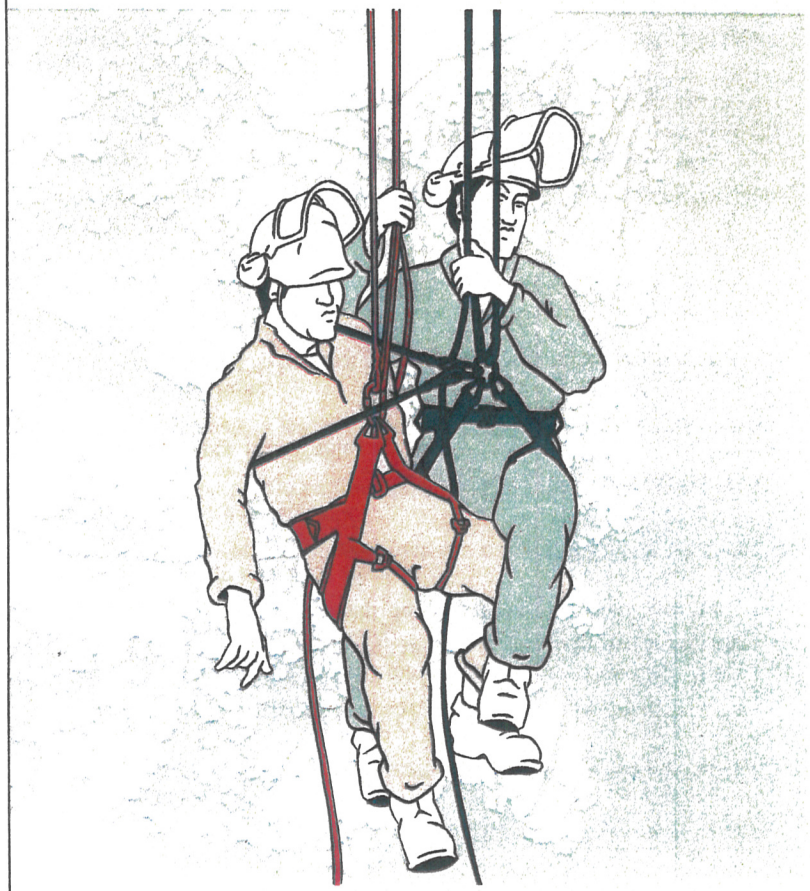
A3 The rescuer assesses the casualty's condition making safe where necessary and administers first aid if appropriate.

A4 Where possible the rescuer should attach the casualty to the rescuer's harness to aid descent and prevent separation of casualty and rescuer.

A5 The rescuer operates his/her own and the casualty's prusik knot to give a controlled descent whilst guiding the casualty through branches.

RESCUE METHOD A.

2 or 3 MAN UNIT WHERE CASUALTY'S ROPE IS UNDAMAGED AND LONG ENOUGH TO DESCEND ON.



A6 If the casualty is conscious then the rescuer should be aware that the casualty is in a position to 'help' during the rescue – this keeps the casualty occupied and aids rescue.

A7 The casualty can be carried away from the tree whilst still attached to the rope, if assistance is available.

A8 Rescue teams need to practice methods regularly, to be effective in actual emergency situations.

RESCUE METHOD B.

2 OR 3 MAN UNIT WHERE CASUALTY'S ROPE IS DAMAGED, TRAPPED OR TOO SHORT TO DESCEND ON WITHOUT RETYING INTO A LOWER ANCHOR POINT

B1 The rescuer climbs to a suitable anchor point above the casualty.

B2 The rescuer descends to the casualty, assesses and makes safe any hazards which threaten the casualty or would impede the rescue, e.g. chainsaw, other equipment/tools, tree debris.

B3 The rescuer assesses the casualty's condition making safe where necessary and administers first aid if appropriat

RESCUE METHOD B.

2 OR 3 MAN UNIT WHERE CASUALTY'S ROPE IS DAMAGED, TRAPPED OR TOO SHORT TO DESCEND ON WITHOUT RETYING INTO A LOWER ANCHOR POINT

B4 The rescuer connects the casualty to the rescuer's rope to transfer the casualty's weight to the new connection, taking up any slack to prevent the casualty falling any distance when his/her rope is cut/disconnected.

B5 The rescuer disconnects or severs the casualty's rope or strop using a retractable knife.

B6 The rescuer descends with the casualty attached to his/her own harness and climbing system.

B7 If the casualty is conscious then the rescuer should be aware that the casualty is in a position to 'help' during the rescue – this keeps the casualty occupied and aids rescue.

B8 The casualty can be carried away from the tree whilst still attached to the rope, if assistance is available.

B9 Rescue teams need to practice methods regularly, to be effective in actual emergency situations.

ADDITIONAL NOTES

When connecting the casualty to the rescuer a long prusik strop should be connected from the casualty's harness to the rescuer's rope on the bowline/soft eyed side.

Heavily loaded prusik knots can jam especially when using cable laid rope and particularly if the rope is wet. Prusiks using sheathed rope, tied loosely or over a karabiner can help to prevent jamming. Incorporation of additional friction into the rescuer's anchor point can also alleviate this problem.

C1 The rescuer climbs to a suitable anchor point above the casualty taking the rescue rope up with him/her. The rescue rope is passed over a suitable anchor point.

C2 The rescuer descends to the casualty, assesses and makes safe any hazards which threaten the casualty or would impede the rescue, e.g. chainsaw, other equipment/tools, tree debris.

RESCUE METHOD C.
3 MAN UNIT ONLY

C3 The rescuer assesses the casualty's condition making safe where necessary and administers first aid if appropriate.

C4 Where possible the rescuer should attach the casualty to the rescuer's harness to aid descent and prevent separation of the casualty and rescuer.

C5 The rescue rope is attached to the casualty's harness.

C6 The groundperson ties a prusik loop on the rescue rope attaching this to a suitable anchorage (groundperson's harness, vehicle, tree, ground anchor, etc). This must have sufficient friction to help the rescuer make a controlled descent.

C7 The rescuer transfers the casualty's weight to the new connection, taking up any slack to prevent the casualty falling any distance then disconnects or severs the casualty's rope/strop.

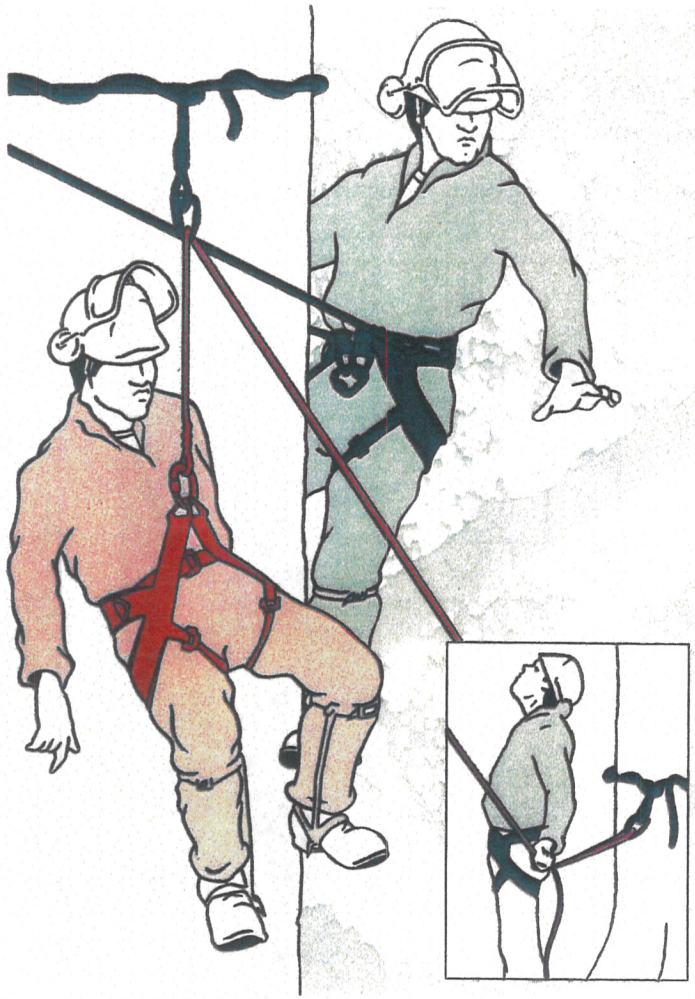
C8 The casualty is gently lowered by the groundsperson whilst the rescuer guides him/her through the branches or supports an injured limb.

C9 If the casualty is conscious then the rescuer should be aware that the casualty is in a position to 'help' during the rescue – this keeps the casualty occupied and aids rescue.

C10 The casualty can be carried away from the tree whilst still attached to the rope, if assistance is available.

C11 Rescue teams need to practice methods regularly, to be effective in actual emergency situations.

RESCUE METHOD D.
2 OR 3 MAN UNIT



D1 The rescuer climbs up to the casualty (using climbing irons and a strop) and with care, makes a suitable anchor with a suitable topping down strop to which the rescue rope is attached.

D2 The rescuer assesses and makes safe any hazards which threaten the casualty or would impede the rescue, e.g. chainsaw, other equipment/tools.

RESCUE METHOD D.
2 OR 3 MAN UNIT

D3 The rescuer assesses the casualty's condition making safe where necessary and administers first aid if appropriate.

D4 Where possible the rescuer should attach the casualty to the rescue rope and rescuer's harness to aid descent and prevent separation of casualty and rescuer.

D5 If the casualty is conscious then the rescuer should be aware that the casualty is in a position to 'help' during the rescue, this keeps the casualty occupied and aids rescue.

D6 Rescue teams need to practice methods regularly, to be effective in actual emergency situations.

ADDITIONAL ITEMS

a If the casualty is unconscious or injury prevents him/her assisting the rescuer the gaffs on his/her climbing irons and/or strop tension can severely hinder release by the rescuer. In such cases the ground personnel must relieve the weight on the strop and/or gaffs so that the rescuer can safely release the casualty's strop. Climbing irons should also be removed if circumstances allow.

b If the casualty's strop has a wire core and has a mechanical adjuster the tension must be released by the groundperson to allow the rescuer to remove the strop.